ABSTRACT OF THE DISCLOSURE

A workstation stores a novel seismic classification software package (known as
the "Seisclass software"). During execution of the Seisclass software by a
processor of the workstation, the workstation processor will present a plurality
of attribute data, describing the characteristics of a geological feature,
simultaneously as "attribute data sets" and as "points in attribute space".
Characteristic groupings and attribute dependencies can be detected, either
automatically or with manual support using a-priori knowledge. Clusters,
groups of data sharing particular characteristics, are classified, either
automatically or with manual support. The classification result is presented as
a "class data set" allowing the association of the attribute characteristics with
data set positions. The type of attributes and their dependencies may allow a
classification of a geological feature, such as a sub-surface, with respect to its
reservoir properties, such reservoir properties including, for example, the
possible existence of underground hydrocarbon deposits in an earth formation.